REMARKS/ARGUMENTS

Responsive to the Office Action mailed September 11, 2006:

I.   NON-PRIOR ART MATTERS

    A.   <u>The Office Action objected to the Drawings.</u>

A replacement drawing sheet is enclosed.

    B.   <u>The Office Action objected to claim 17.</u>

Claim 17 has been cancelled.

    C.   <u>The Office Action rejected claims 15, 17, 21, 27, and 28 and 17 and 21 under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.</u>

A new set of claims is enclosed that addresses this objection.

II.   PRIOR ART MATTERS

    A.   <u>The Office Action rejected claims 15-18, 21, 22, and 27-28 under 35 USC 103(a) as being unpatentable over Kerber in view of Ludl and further in view of Liu. Applicant respectfully traverses the rejection.</u>

The Examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness.[1]   If the Examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of non-obviousness.[2]

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found <u>in the prior art, and not based on applicant's disclosure.</u>[3]

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[1] MPEP Sec. 2142.

[2] Id.

[3] Id. (emphasis supplied)

Applicant respectfully traverses the § 103 rejection because the office action has not established a *prima facie* case of obviousness.

The references do not teach or suggest all the claim limitations.

In the cited references, the realization of merging is based on a local criterion. The groups are considered by pairs.

In the current patent application, the realization of the merging is based on a global criterion, which makes the decision more reliable. Merging that optimizes the criterion in a global manner is disclosed. As long as the criterion can be optimized, the merging is done. See, e.g., page 21 lines 10-23 ("global value of χ^2).

Kerber discloses (page 124, column 2, section "ChiMerge algorithm") a method that "compute the Chi2 value of each pair of adjacent intervals." As in the current application, the criterion is evaluated for all pairs of adjacent intervals, but the criterion is local for two adjacent intervals and not global for all intervals of the partition as it is now clarified by the added characteristic in the limitation (b) of claim 29.

Liu discloses an improvement of the method of Kerber, This improvement concerns an automatic searching method to find the value of the stopping criterion. This improvement does not change the local aspect of the criterion.

Ludl knows and cites Kerber but he does not use it for his criterion relative to the intervals merging. Ludl discloses (section 3.3, figure 2) a method to identify the "split points" by a method that is not supervised ("equal width") and that does not use an optimized criterion.

Ludl also discloses ("post-processing," section 3.5) a method to merge the split points when they are sufficiently close in comparison to a predefined value "s". The criterion is local and the method can be considered as a local evaluation of the proximity of two split points and a merging of them in relation to this proximity.

In addition, in the current patent application, a second stopping criterion is taken into account. Because some decisions may be wrong, the second stopping criterion is needed. It is related to the variation of the merging criterion (in particular, the variation of $\chi^{2)}$.

None of the cited references discloses the fact that the variation of the merging criterion is taken into account to force the merging step as long as the second criterion is not fulfilled. In

the references, "second criteria" are taken into account, but none of them is related to the variation of the merging criterion.

This criterion increases the reliability of the method and generates a theoretical warranty of reliability. See: Boulle', M. (2003) Khiops: a Discretization Method of Continuous Attributes with Guaranteed Resistance to Noise. Proceedings of the Third International Conference on Machine Learning and Data Mining in Pattern Recognition, 50-64.

> B.   <u>The Office Action indicated that claims 19, 20, and 23-26 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.</u>
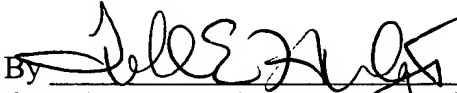
Because a new set of claims is being submitted, this allowance is moot. However, Applicant thanks the Examiner for indicating allowable subject matter.

For the above reasons, Applicant respectfully requests the allowance of all claims and the issuance of a Notice of Allowance.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 02-3732.

Respectfully submitted,

Dated: 11 Dec 06

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